Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Stroke: percentage of SAH and ICH stroke patients for whom a severity measurement is performed prior to surgical intervention in patients undergoing surgical intervention and documented in the medical record, OR documented within 6 hours of arrival at the hospital ED for patients who do not undergo surgical intervention.

Source(s)

The Joint Commission. Disease-specific care certification program. Comprehensive stroke: performance measurement implementation guide. Oakbrook Terrace (IL): The Joint Commission; 2015 Mar. 278 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of subarachnoid hemorrhage (SAH) and intracerebral hemorrhage (ICH) stroke patients for whom a severity measurement (i.e., Hunt and Hess Scale for SAH patients or ICH Score for ICH patients) is performed prior to surgical intervention (e.g., clipping, coiling, or any surgical intervention) in patients undergoing surgical intervention and documented in the medical record, OR documented within 6 hours of arrival at the hospital emergency department for patients who do not undergo surgical intervention.

This measure represents the overall rate. The following rates are also reported:

Hunt and Hess Scale performed for SAH patients
ICH Score performed for ICH patients

Rationale

Subarachnoid hemorrhage (SAH) and intracerebral hemorrhage (ICH) are medical emergencies requiring rapid diagnosis and assessment. Early deterioration is common in the first few hours after onset, and associated with increased mortality rates of greater than 75% compared to 30-day mortality rates of 35% to 52%. More than half of all deaths from these conditions occur within the first two days. According to the American Heart Association/American Stroke Association, the severity of SAHs should be documented with the Hunt and Hess Scale, and the severity of ICHs should be documented with ICH score to capture the clinical state of the patient. The severity of initial neurological injury should be determined and documented in the emergency department because it is a useful predictor of outcome and helpful in planning future care with family and physicians. For both severity methodologies, higher scores are associated with increased mortality.

Evidence for Rationale

Broderick J, Connolly S, Feldmann E, Hanley D, Kase C, Krieger D, Mayberg M, Morgenstern L, Ogilvy CS, Vespa P, Zuccarello M, American Heart Association, American Stroke Association Stroke Council, High Blood Pressure Research Council, Quality of Care and Outcomes in Research Interdisciplinary Working Group. Guidelines for the management of spontaneous intracerebral hemorrhage in adults: 2007 update. Stroke. 2007 Jun;38(6):2001-23. [204 references] PubMed

Connolly ES, Rabinstein AA, Carhuapoma JR, Derdeyn CP, Dion J, Higashida RT, Hoh BL, Kirkness CJ, Naidech AM, Ogilvy CS, Patel AB, Thompson BG, Vespa P, American Heart Association Stroke Council, Council on Cardiovascular Radiology and Intervention, Council on Cardiovascular Nursing, Council on Cardiovascular Surgery and Anesthesia, Council on Clinical Cardiology. Guidelines for the management of aneurysmal subarachnoid hemorrhage: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. Stroke. 2012 Jun;43(6):1711-37. PubMed

Hunt WE, Hess RM. Surgical risk as related to time of intervention in the repair of intracranial aneurysms. J Neurosurg. 1968 Jan;28(1):14-20. PubMed

Hunt WE, Kosnik EJ. Timing and perioperative care in intracranial aneurysm surgery. Clin Neurosurg. 1974;21:79-89. PubMed

Leifer D, Bravata DM, Connors JJ, Hinchey JA, Jauch EC, Johnston SC, Latchaw R, Likosky W, Ogilvy C, Qureshi AI, Summers D, Sung GY, Williams LS, Zorowitz R, American Heart Association Special Writing Group of the Stroke Council, Atherosclerotic Peripheral Vascular Disease Working Group, Council on Cardiovascular Surgery and Anesthesia, Council on Cardiovascular Nursing. Metrics for measuring quality of care in comprehensive stroke centers: detailed follow-up to Brain Attack Coalition comprehensive stroke center recommendations: a statement for healthcare professionals from the American Heart Association/American Stroke Association. Stroke. 2011 Mar;42(3):849-77. PubMed

Matchett SC, Castaldo J, Wasser TE, Baker K, Mathiesen C, Rodgers J. Predicting mortality after intracerebral hemorrhage: comparison of scoring systems and influence of withdrawal of care. J Stroke Cerebrovasc Dis. 2006 Jul-Aug;15(4):144-50. PubMed

Morgenstern LB, Hemphill JC 3rd, Anderson C, Becker K, Broderick JP, Connolly ES Jr, Greenberg SM, Huang JN, MacDonald RL, Messe SR, Mitchell PH, Selim M, Tamargo RJ, American Heart Association Stroke Council and Council on Cardiovascular Nursing. Guidelines for the management of spontaneous intracerebral hemorrhage: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. Stroke. 2010 Sep;41(9):2108-29. PubMed

Rosen DS, Macdonald RL. Subarachnoid hemorrhage grading scales: a systematic review. Neurocrit Care. 2005;2(2):110-8. PubMed

The Joint Commission. Disease-specific care certification program. Comprehensive stroke: performance measurement implementation guide. Oakbrook Terrace (IL): The Joint Commission; 2015 Mar. 278 p.

Primary Health Components

Stroke; subarachnoid hemorrhage (SAH); intracerebral hemorrhage (ICH); severity measurement; Hunt and Hess Scale; ICH Score; surgery

Denominator Description

Subarachnoid hemorrhage (SAH) and intracerebral hemorrhage (ICH) stroke patients who arrive at the hospital emergency department (ED) (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

The number of subarachnoid hemorrhage (SAH) and intracerebral hemorrhage (ICH) stroke patients for whom a severity measurement is performed prior to surgical intervention in patients undergoing surgical intervention and documented in the medical record, OR documented within 6 hours of hospital arrival for patients who do not undergo surgical intervention

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

A systematic review of the clinical research literature (e.g., Cochrane Review)

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

Unspecified

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Emergency Department

Hospital Inpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Making Care Safer
Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality

Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Safety

Timeliness

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Institutionalization

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
Discharges with International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Principal Diagnosis Code for hemorrhagic stroke as defined in the appendices of the original measure documentation with or without aneurysm repair procedure (ICD-9-CM Principal or Other Procedure Code as defined in the appendices of the original measure documentation) or surgical intervention procedure (ICD-9-CM Principal or Other Procedure Code as defined in the appendices of the original measure documentation)

Exclusions

- Patients less than 18 years of age
- Patients who have a length of stay greater than 120 days
- Patients with *Comfort Measures Only* (as defined in the Data Elements) documented on the day of or

day after hospital arrival
Non-surgical patients discharged within 6 hours of arrival at the hospital
Patients with admitting diagnosis of traumatic brain injury (TBI), unruptured arteriovenous malformation (AVM), and non-traumatic subdural hematoma (ICD-9-CM Other Diagnosis Codes as defined in the appendices of the original measure documentation)

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
The number of subarachnoid hemorrhage (SAH) and intracerebral hemorrhage (ICH) stroke patients for whom a severity measurement is performed prior to surgical intervention in patients undergoing surgical intervention and documented in the medical record, OR documented within 6 hours of hospital arrival for patients who do not undergo surgical intervention

Exclusions
None

Numerator Search Strategy

Institutionalization

Data Source

Administrative clinical data

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

- Hunt and Hess Scale
- Intracerebral Hemorrhage (ICH) Score
- Comprehensive Stroke (CSTK) Initial Patient Population Algorithm Flowchart
- CSTK-03: Severity Measurement Performed for SAH and ICH Patients (Overall Rate) Flowchart

Computation of the Measure

Measure Specifies Disaggregation

Measure is disaggregated into categories based on different definitions of the denominator and/or numerator

Basis for Disaggregation

The CSTK-03 measure is reported as an overall rate which includes subarachnoid hemorrhage (SAH) and intracerebral hemorrhage (ICH) stroke patients for whom a severity measurement is performed prior to surgical intervention in patients undergoing surgical intervention and documented in the medical record, OR documented within 6 hours of hospital arrival for patients who do not undergo surgical intervention.

> CSTK-03a: The number of SAH patients for whom a Hunt and Hess Scale is performed prior to surgical intervention in patients undergoing surgical intervention and documented in the medical record, OR documented within 6 hours of hospital arrival for patients who do not undergo surgical intervention.
> CSTK-03b: The number of ICH stroke patients for whom an ICH Score is performed prior to surgical intervention in patients undergoing surgical intervention and documented in the medical record, OR documented within 6 hours of hospital arrival for patients who do not undergo surgical intervention.

CSTK-03a and CSTK-03b are subsets of the overall rate, and stratified by the type of stroke patient.

Data Reported As: Aggregate rate generated from count data reported as a proportion.

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

CSTK-03: severity measurement performed for SAH and ICH patients (overall rate).

Measure Collection Name

Advanced Certification in Disease-specific Care Measures

Measure Set Name

Comprehensive Stroke Standardized Performance Measures

Submitter

The Joint Commission - Health Care Accreditation Organization

Developer

The Joint Commission - Health Care Accreditation Organization

Funding Source(s)

All external funding for measure development has been received and used in full compliance with The Joint Commission's corporate sponsorship policies, which are available upon written request to The Joint Commission.

Composition of the Group that Developed the Measure

Unspecified

Financial Disclosures/Other Potential Conflicts of Interest

Expert panel members have made full disclosure of relevant financial and conflict of interest information in accordance with The Joint Commission's conflict of interest policies, copies of which are available upon written request The Joint Commission.

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Mar

Measure Maintenance

This measure is reviewed and updated by the developing organization every 6 months.

Date of Next Anticipated Revision

2015 Jul

Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in April 2016.

Measure Availability

Source available from The Joint Commission Web site .

For more information, contact The Joint Commission at One Renaissance Blvd., Oakbrook Terrace, IL 60181; Phone: 630-792-5800; Fax: 630-792-5005; Web site: www.jointcommission.org .

NQMC Status

This NQMC summary was completed by ECRI Institute on May 19, 2015. The information was verified by the measure developer on June 22, 2015.

The information was reaffirmed by the measure developer on April 6, 2016.

Copyright Statement

Production

Source(s)

The Joint Commission. Disease-specific care certification program. Comprehensive stroke: performance measurement implementation guide. Oakbrook Terrace (IL): The Joint Commission; 2015 Mar. 278 p.

Disclaimer

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